

## **ATOMIC LAMINATES FOR DIFFUSION BARRIER APPLICATIONS**

### **ABSTRACT OF THE DISCLOSURE**

The present invention relates to a very thin multilayer diffusion barrier for a semiconductor device and fabrication method thereof. The multilayer diffusion barrier according to the  
5 present invention is fabricated by forming a very thin, multilayer diffusion barrier composed of even thinner sub-layers, where the sub-layers are only a few atoms thick. The present invention provides a diffusion barrier layer for a semiconductor device which is in a substantially amorphous state and thermodynamically stable, even at high temperatures.